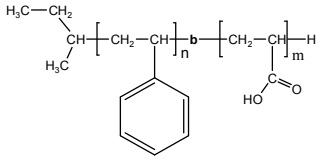
Sample Name: **Poly (styrene -b- acrylic acid)**
Sample #: **P19511-SAA**

**Structure:**



**Composition:**

| Mn x $10^3$ PS-b-PAA | PDI |
|---|---|
| 3.0-B-10.0 | 1.4 |
| Dp: 29-b-139 | |

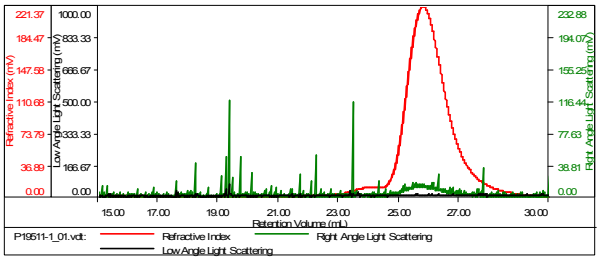
**Synthesis Procedure:**
Poly (styrene-b-acrylic acid) is prepared by living anionic polymerization with sequence addition of styrene followed by t-butyl acrylate and hydrolysis of the t-butyl group.

**Characterization:**
By HNMR. SEC and by FTIR.

Solubility: Polymer must be soluble in THF if not than it has been cross linked due to the formation of inter molecular anhydride formation.

**Sample ID:P19511-S first block**

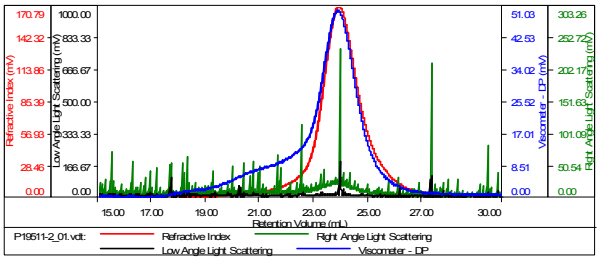
| | |
|---|---|
| **Concentration (mg/mL)** | 1.7267 |
| **Sample dn/dc (mL/g)** | 0.1850 |
| **Method File** | PS80K-June30-2015-0000.vcm |
| **Column Set** | 3x PL 1113-6300 |
| **Solvent** | THF |




| Sample | MW Number Average (Da) | MW Weight Average (Da) | MW at Peak (Da) | Polydispersit | Intrinsic Viscosity (dL/g) |
|---|---|---|---|---|---|
| P19511-1_01.vdt | 3,484 | 3,680 | 3,536 | 1.056 | 0.3099 |

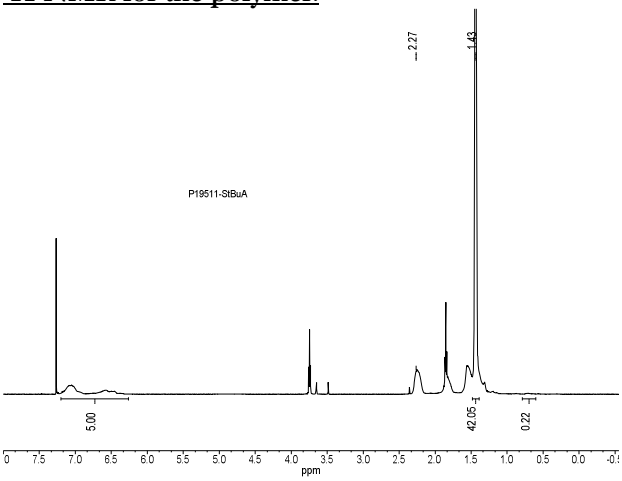
**Sample ID:P19511-StBuA**

| | |
|---|---|
| **Concentration (mg/mL)** | 3.1920 |
| **Sample dn/dc (mL/g)** | 0.0880 |
| **Method File** | PS80K-June30-2015-0000.vcm |
| **Column Set** | 3x PL 1113-6300 |
| **Solvent** | THF |




| Sample | MW Number Average (Da) | MW Weight Average (Da) | MW at Peak (Da) | Polydispersit | Intrinsic Viscosity (dL/g) |
|---|---|---|---|---|---|
| P19511-2_01.vdt | 19,367 | 27,356 | 16,264 | 1.413 | 0.8571 |

**$^1$H NMR for the polymer:**




***References for further information:***


1. S. K. Varshney, R. Fayt, Ph. Teyssie, and J.P. Hautekeer US Patent 5,264,527 (1993)
2. Ph. Teyssie, R. Fayt, S**. K. Varshney**, and C. Jacobs Eur. Pat. Appl., Jan 16, 1991 *Eur.Pat.408420*
   *Patent Assignees- Atochem S.A France. CA. Vol 114, 26, 247998.*" Star Block Copolymers based on Acrylates and Methacrylates and their Manufacture process".
3. Ph.Teyssie, R. Fayt, and S**. K. Varshney**, *Eur. Pat. Appl. Dec. 12, 1990. Eur. Pat.402204 Patent* Assignees-Norsolor S.A. France. CA Vol 114, 20, 186314."Catalyst for the the Anionic Living Polymerization (Meth)acrylates".